

Notice of Allowability

Application No.

10/526,099

Applicant(s)

KELLEY, BRUCE T

Examiner

Jason M. Greene

Art Unit

1724

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to ____.
2. ☒ The allowed claim(s) is/are 1-9.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: ____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date ____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date ____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date 2/25/05
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date ____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other ____.

DETAILED ACTION

Allowable Subject Matter

1. Claims 1-9 are allowed.
2. The following is an examiner's statement of reasons for allowance:

With regard to claims 1-5, Hachimaki (US 6,540,817 B1) discloses a method of separating a component from a multi-component gas comprising providing a flow conduit (11) having a semi-permeable section adapted to selectively permeate the component to be separated in the presence of the multi-component gas flowing therethrough, the flow conduit having a feed side and a permeate side, passing the multi-component gas along the feed said of the flow conduit, providing a sweep gas at a first velocity, the sweep gas being suitable for passage along the permeate side of the flow conduit and being suitable for sweeping the component gas that permeates through the permeable section of the conduit away from the permeable side of the flow conduit, thereby producing a gas mixture comprising the sweep gas and the component gas in Fig. 2 and col. 3, line 39 to col. 8, line 52.

The prior art made of record does not teach or fairly suggest the method of claim 1 comprising accelerating the velocity of the sweep gas so the velocity of the sweep gas along at least a portion of the permeate side of the flow conduit is greater than the first

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velocity of the sweep gas, and decelerating the gas mixture by means of a diffuser, thereby recovering as pressure a portion of the energy of the gas mixture.

With regard to claims 6-9, Hachimaki (US 6,540,817 B1) discloses a membrane separation system for separating one or more components from a multi-component gas comprising a first flow conduit (11) longitudinally positioned inside a portion of a second flow conduit (6), the first conduit adapted for flow of the multi-component gas therethrough, the first flow conduit having a semi-permeable membrane for permeation therethrough of one or more components of the multi-component gas, the second conduit adapted for passage of a sweep gas to facilitate removal of the permeate on the permeate side of the membrane, the second conduit having a first area (6g) followed by a larger second area (6a), the second flow area being concentric to at least a portion of the membrane, and the second conduit having a third flow area (6f) in a downstream direction of the second flow area, the third flow area being smaller than the second flow area in Fig. 2 and col. 3, line 39 to col. 8, line 52.

The prior art made of record does not teach or fairly suggest the system of claim 6 wherein the second flow area is smaller than the first flow area and greater than the third flow area.

3. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

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accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Sengupta et al., Krueger et al., Trimmer et al., Goldsmith and Goetzman et al. references disclose similar gas separation systems.


5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M. Greene whose telephone number is (571) 272-1157. The examiner can normally be reached on Monday - Friday (9:00 AM to 5:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571) 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jason M. Greene
Primary Examiner
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8/17/07

jmg
August 17, 2007